



Denyo

Environmental Report 2021
(2020.4-2021.3)

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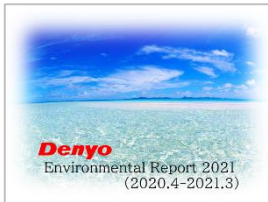


Editorial Statement

Information Disclosure

Denyo Co., Ltd. will use the media shown below to disclose information to all stakeholders, including customers and shareholders about its environmental initiatives aimed at delivering a sustainable society.

【 Annual Environmental Report】 <https://www.denyco.co.jp/english/>



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Fiscal 2021 (April 2020 to March 2021) and for some content, the periods before and after.

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Disclaimer

This Environmental Report may contain predictions or forecasts about the future. Actual results may vary from forecasts due to a variety of factors.

Management

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Management

Message from the President

Thank you very much for reading our Environmental Report. In FY2021, our daily lives changed dramatically as COVID-19 spread globally, with the Japanese government declaring a state of emergency and repeatedly advising people to stay home. In the meantime, the government declared in October 2020 that Japan would realize a decarbonized society. We have been frequently hearing news associated with environmental issues in these days, such as the commercialization of renewable energy and promotion of de-plasticization. Many Sustainable Development Goals (SDGs) talk about the global environment. People have become more conscious of environmental issues as critical challenges that the whole world must address together. As a member of society, we will contribute to the formation of a sustainable society through a proactive involvement in environmental activities and by developing environmentally friendly products, such as introducing energy saving equipment while researching and developing hydrogen products. We appreciate your continued understanding and support.

October 2021

Shoichi Shiratori,
President



Management

Environmental Philosophy

As well as contributing to social infrastructure upgrades worldwide through our power source products, Denyo is profoundly aware of its corporate social responsibility to conserve the environment, and tirelessly promotes environmentally sound business activities.



Fukui Plant

Environmental Policies

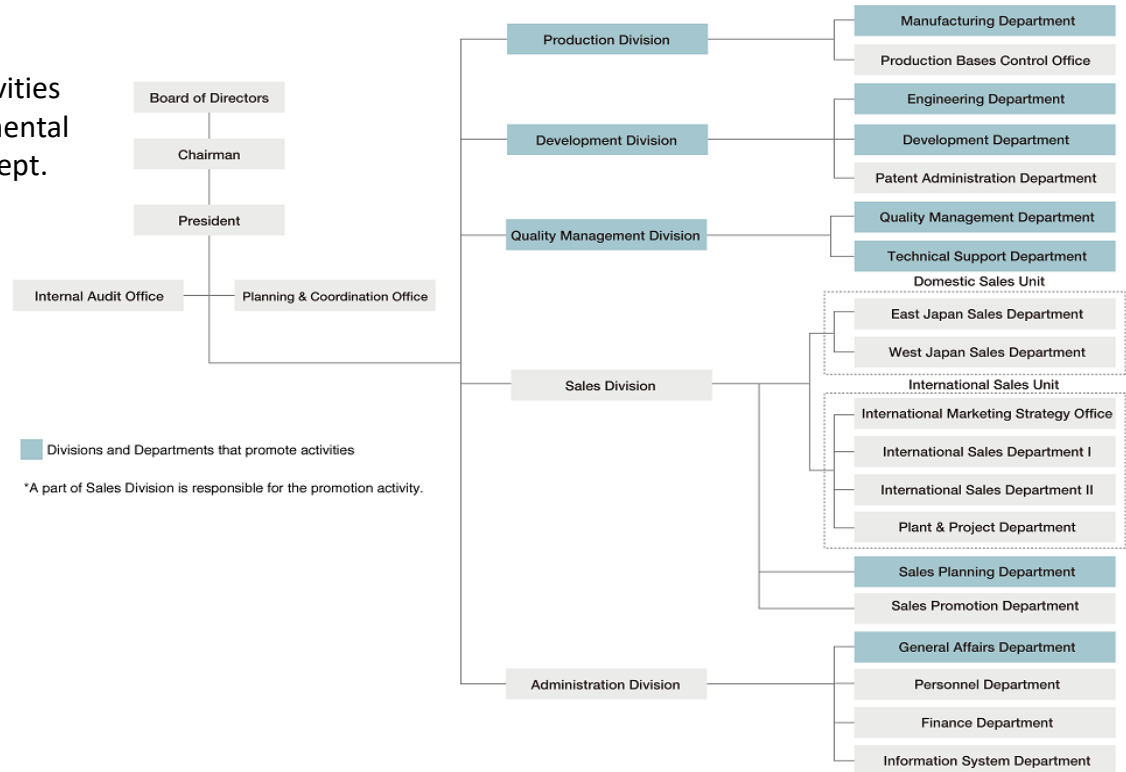
1. In our business activities, we strive to prevent pollution and to promote eco-friendly products while seeking ways to maintain a healthy environment by conserving materials and energy, cutting back on solid waste, and reducing odors and noise.
2. We comply with environmental regulations and other agreed requirements, and we respect related demands from society.
3. As well as building a system of management which is based on the ISO14001:2015 to engage with environmental conservation and finding ways to make continual improvements, we set environmental goals and targets, and improve environmental performance by carrying out reviews.
4. As well as documenting the environmental policies to inform employees and everyone who works on behalf of the company, including the requirements of stakeholders, we disclose the information in the public domain on our homepage.
5. We strive to achieve environmental targets by continually improving the effectiveness and efficiency of the process.

Management

Environmental Management Structure

◆ Promotion System

Denyo is carrying out promotion activities aimed at reducing the total environmental impact by the following promotion Dept. intensively.



◆ ISO14001 Certification

Denyo has established an environment management system (EMS) with the president as the system manager and obtained ISO14001:2015 certification. While ensuring smooth operation of the EMS, we evaluate the environmental impact of our business activities, set concrete targets and an annual plan for important issues, and perform environmental load reduction and environmental risk prevention activities through the promotion of resource and energy saving.

Management

Environmental Targets and Achievements

To implement environmental management, we set targets for each fiscal year and carry out evaluations from time to time.

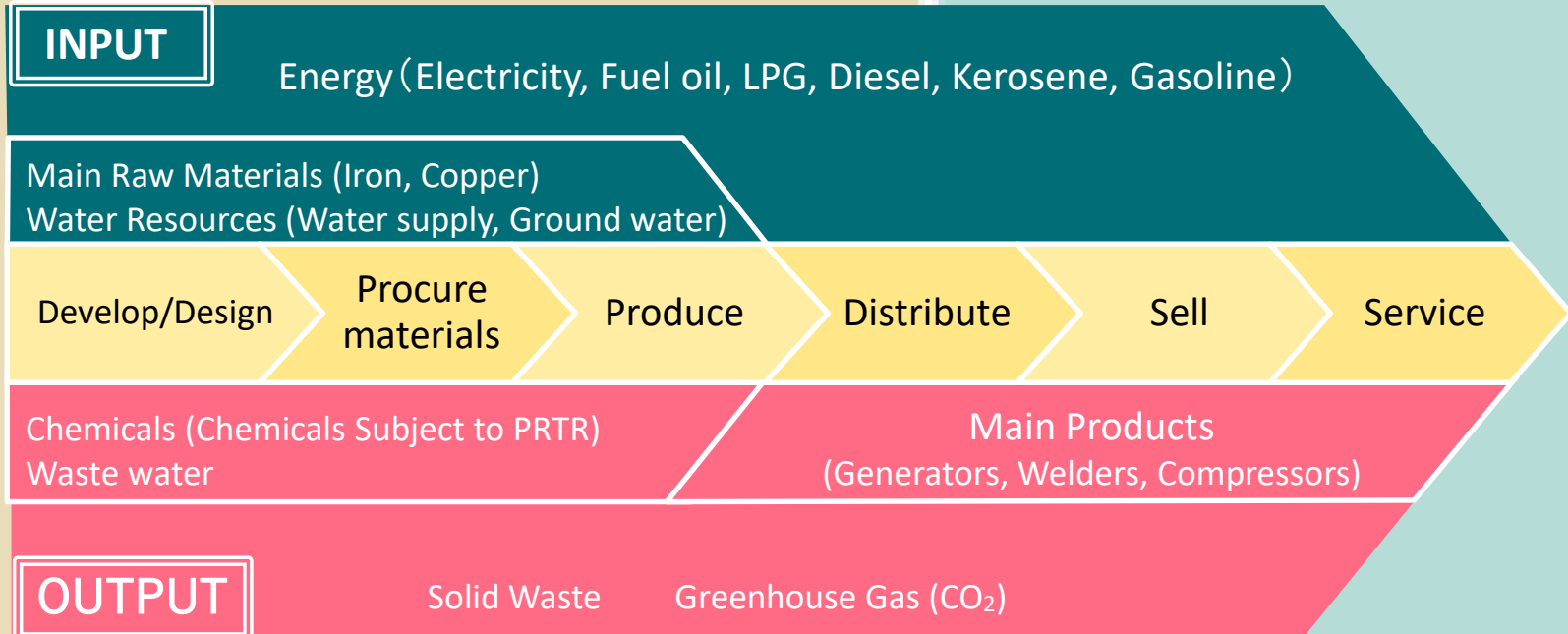
Item	FY2021 Target	FY2021 Achievements	FY2022 Target
Develop products with high environmental performance	Develop eco-friendly products based on new proprietary technologies	Develop welding machine with an automatic idle stop feature	Develop eco-friendly products based on new proprietary technologies
Formation of a recycling-based society	By the end of FY2021, we will cut the volume of industrial waste per output by at least 13.5% compared to FY2017 levels.	13.9% year-on-year reduction per output compared to FY2017 levels	By the end of FY2022, we will cut the volume of industrial waste per output by at least 15% compared to FY2017 levels.
	By the end of FY2021, we will cut the volume of crude oil equivalent energy used per output by at least 7% compared to FY2017 levels.	5.1% increase per output in FY2017* *Increased due to reasons such as preparation for operation and test runs accompanying the introduction of new production equipment. Energy savings are forecast for the following fiscal year because of higher productivity.	By the end of FY2022, we will cut the volume of crude oil equivalent energy used per output by at least 7.5% compared to FY2017 levels.
Contribute to society	Enhance maintenance in green belts adjoining the areas around our business facilities.	<ul style="list-style-type: none"> • Carry out cleaning activities on roads surrounding the premises • Plant flowers in season and increase planters 	Enhance maintenance in green belts adjoining the areas around our business facilities.

Management

Overview of Environmental Impact in the Value Chain

Eco-Friendly Production

Environmental Consciousness in the Product Life Cycle



Denyo strives to reduce its environmental impact by understanding the input and output of materials in its production and other business activities (P.17~P.22)

Through product knowledge lectures and services including inspections performed upon delivery and regular inspections, Denyo strives to reduce its environmental impact through the proper use of our products. (P.14~P.16)

Management

Environmental Accounting

We quantitatively manage the implementation of our environmental conservation activities through environmental accounting and use the results to ensure efficient and effective environmental conservation activities.

(We use a unique tabulation system for environmental accounting developed while referencing the Environmental Accounting Guidelines 2005 from the Ministry of the Environment.)

Category		Contents	Expenses (thousands of yen)
Business area cost	Pollution prevention cost	Cost of environmental measurements (water quality, odor, vibration, noise, smoke, etc.)	3,708
	Global environmental conservation cost	CFC equipment disposal cost	2,039
	Resource circulation cost	Waste disposal cost	14,103
Upstream/downstream cost			0
Environmental activities cost		Green maintenance and management costs, environment-related equipment inspection and maintenance costs	7,645
Social activities cost			0
Environmental remediation cost			0
Total			27,495

Management

Environmental risk management

Denyo assumes the environmental risks of a sudden accident or disaster, etc. that may occur during our business activities and implements regular education and training for the purposes of the prevention of, early action against, and mitigation of such situations.

We are confirming the appropriate response and making continuous improvements while looking back on past cases.

◆ The Emergency Response Education and Training



Explanation of the emergency response manual



Fire extinguisher training

Eco-Friendly Products



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Auto Pump Generator	
Conservation of biodiversity and ecosystem	…p.13

Eco-Friendly Products

Developing Products with High Environmental Performance

◆ Fuel Cell Portable Generator

We have started developing portable fuel-cell generators and demonstrated operations, considering fuel cells for hydrogen-based power generation as an effective means of reducing CO₂ emissions, a cause of global warming. These activities are based on adoption of the Guided Technology Development and Demonstration Project for Strengthening Measures to Reduce CO₂ Emissions by the Ministry of the Environment.

We are working to encourage the use of renewable energy and realize a sustainable society through the use of fuel cells.



Fuel Cell Portable Generator

*The system employs the cell technology used in the first-generation MIRAI fuel cell vehicle (FCEV) from Toyota Motor

◆ Auto Pump Generator

Auto Pump Generator has the function to automatically start/stop a generator/submersible pump by turning on/off the float switch according to the water level when a submersible pump is used during wastewater treatment at construction sites.

The product is designed to reduce fuel consumption and CO₂ emissions and even noise by decreasing unnecessary operation.



DCA-45LSKB
Auto Pump Generator

Eco-Friendly Products

Conservation of biodiversity and ecosystem

Denyo has enhanced its lineup of models incorporating Eco Base, which prevents oil and other leaks from the machine in unexpected situations.

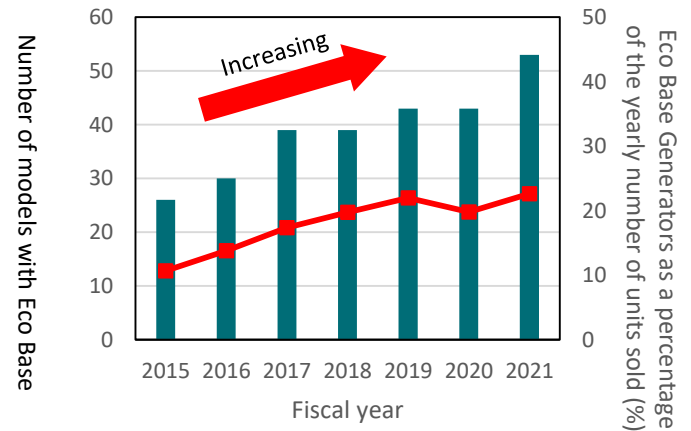
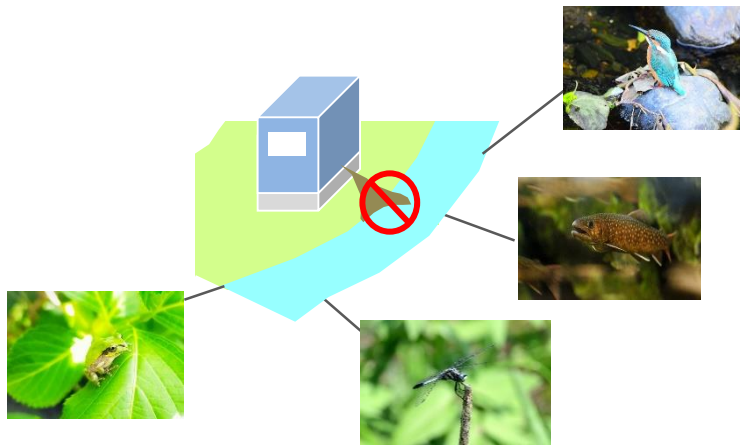


「Eco Base」

It prevents fuel, oil or coolant inside the machine from leaking, because Eco Base can receive it.



If an oil or other leak of oil from the machine is prevented, it will reduce the burden on the environment and conserve biodiversity and ecosystems.



■ Number of models —■ Eco Base Generators ratio

Our customers have selected these models, appreciating the strong lineup of Eco Base models as the market becomes more aware of the environment.

Environmental Consciousness in the Product Life Cycle

Contents



After-Sales Service Initiatives ...p.15

Periodical maintenance service

Training for service staff

Product knowledge lectures

Environmental Consciousness in the Product Life Cycle

Approximately 90% of CO₂ emissions in the life cycle of construction machinery is generated while the products are being used. In addition, there is the risk that an unexpected accident during use may cause environmental pollution. Denyo believes that it is important to promote eco-friendly products and provide after-sales services to ensure users have the correct knowledge to operate our products safely.

After-Sales Service Initiatives



Machine internal inspection at delivery of a generator



Test run inspection at delivery of a generator

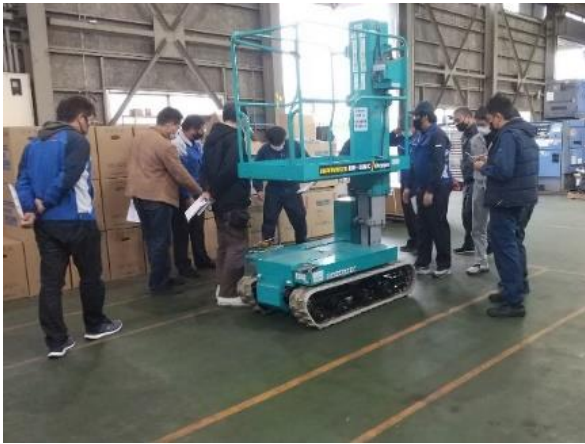
◆ Periodical maintenance service

Inspections are performed via the national network of service factories*. We work to maintain the products on customer sites in good condition.

* Service factory: Subcontracting companies that perform servicing operations such as the inspection and repair of Denyo products and sales of parts

Environmental Consciousness in the Product Life Cycle

After-Sales Service Initiatives



Practical training for service staff

◆ Training for service staff

We provide education for the servicing staff working in the service factories to ensure that high-quality services are provided.



Product knowledge lectures for customers

◆ Product knowledge lectures

We give seminars about product knowledge so that our customers can be equipped with the proper knowledge and use our products safely.

Eco-Friendly Production



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Eco-Friendly Production

Global Warming Prevention

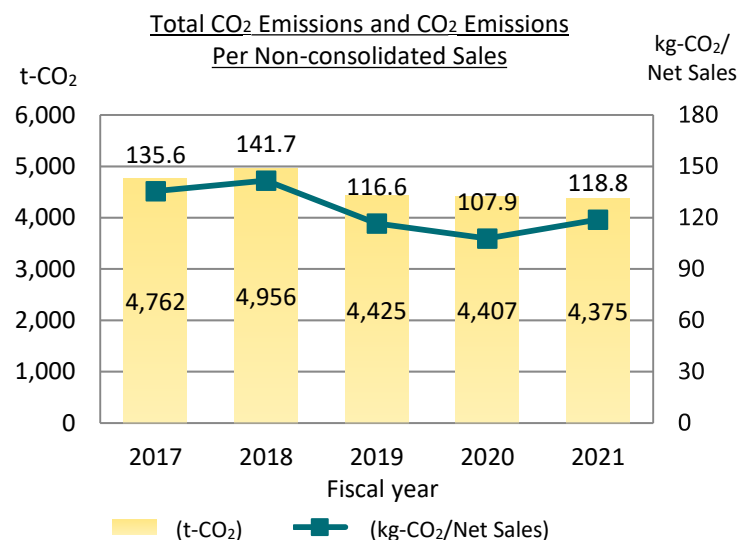
◆ Reduce CO₂ Emissions

Denyo endeavors to prevent global warming through initiatives to reduce CO₂ emissions due to business activities. CO₂ emissions in FY2021 were 4,375 tons, a decrease of 8.1% from the FY2017 levels.

Energy consumption increased from FY2020 due to the preparation and test runs of new production equipment. In spite of this, converted CO₂ emissions dropped from 2017 because of the changed CO₂ emission coefficient of purchased electricity. Denyo will continue to reduce CO₂ emissions.

	Power consumption (thousand kWh)	Fuel consumption (GJ)	CO ₂ emission after conversion (t)	Net Sales (Millions of yen)	CO ₂ emissions (kg) / Non-consolidated sales (Millions of yen)
FY2021	5,025.0	39,346.5	4,375	36,814	118.8
FY2017	4,932.7	34,088.2	4,762	35,117	135.6
Change from FY2017	+ 1.9 %	+15.4 %	△8.1 %	+ 4.8 %	△12.4%

※Net sales is Denyo Non-consolidated Sales



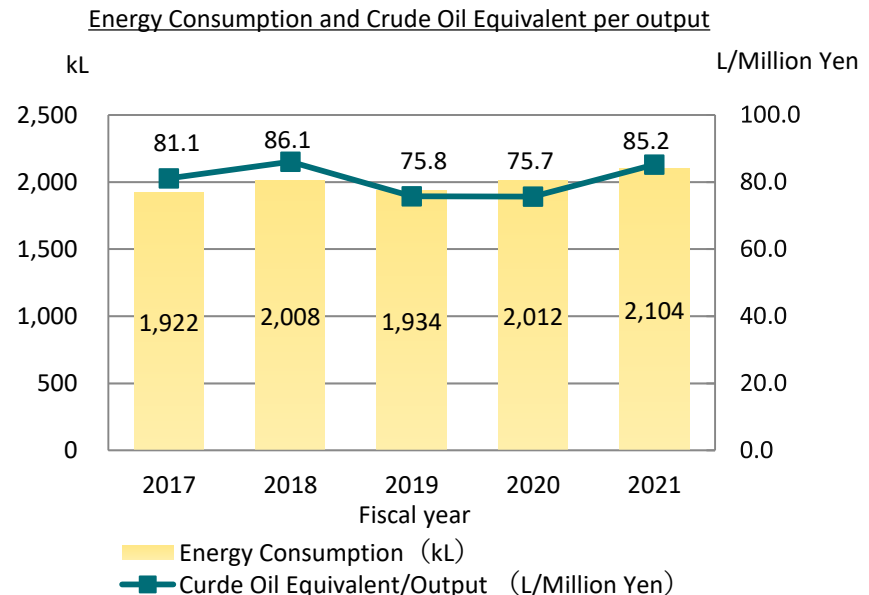
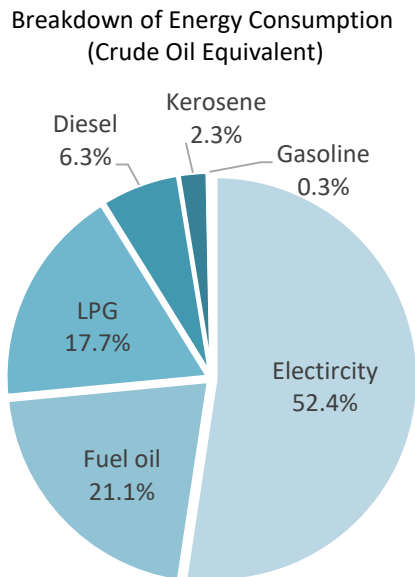
Eco-Friendly Production

Formation of a Recycling-based Society

◆ Energy Consumption reduction

The volume of crude oil equivalent energy used per output in FY2021 was 85.2L/million yen, which is an increase of 5.1% from the FY2017 levels.

This may have stemmed from the rapid rise in electricity and LPG consumption during the introduction and test runs of new equipment. We forecast higher production efficiency and energy savings as a result, once the new equipment starts to operate.



Eco-Friendly Production

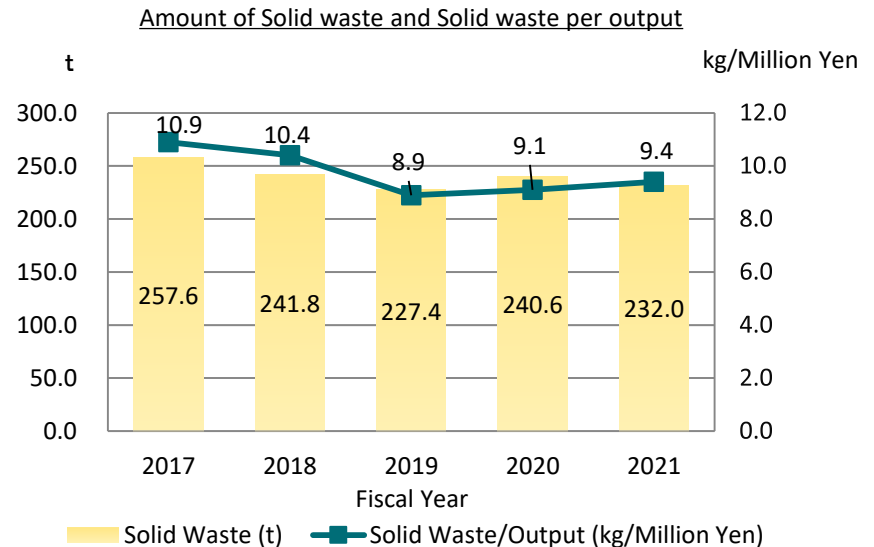
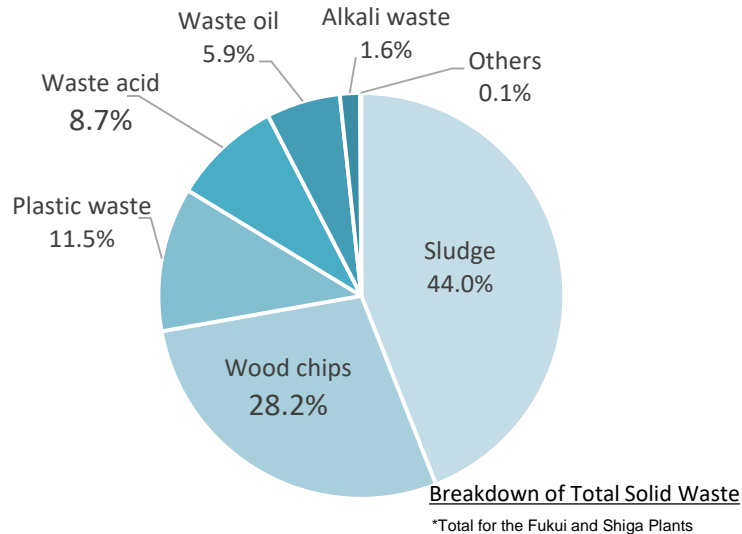
Formation of a Recycling-based Society

◆ Reduce Solid Waste

We manage and process solid waste appropriately and in compliance with all laws and ordinances.

In FY2021, we discharged about 232 tons of industrial waste, down by 13.9% per output compared to the FY2017 levels.

We are also working toward to implement initiatives to reduce a certain amount or more of Solid Waste stably.



Eco-Friendly Production

Formation of a Recycling-based Society

◆ 3Rs Activities

In recent years, there have been problems with the depletion of resources such as petroleum, which are essential for our daily lives, and the shortage of final disposal sites for garbage. The importance of 3Rs (Reduce, Reuse, Recycle) has been increasing.

Denyo implements a range of initiatives to make effective use of limited resources and minimize the impact on the environment. We will now introduce some of these activities.

Reduce / Reuse

Denyo changed from wooden pallets to iron pallets on the loading platforms used to transport products and other goods. The disused wooden pallets were taken by companies that use wooden pallets, through which 1,518 wooden pallets were recycled in FY2021.

This resulted in a waste reduction of approximately 26 t.

Recycle

The wood chips generated in the production process were all recycled. 46% of sludge, waste plastics, and waste alkali was recycled as cement materials.

This resulted in recycling of approximately 128 tons of waste, which is 55% of the total, 232 tons of waste, as new raw materials in FY2021.

Eco-Friendly Production

Managing Chemicals

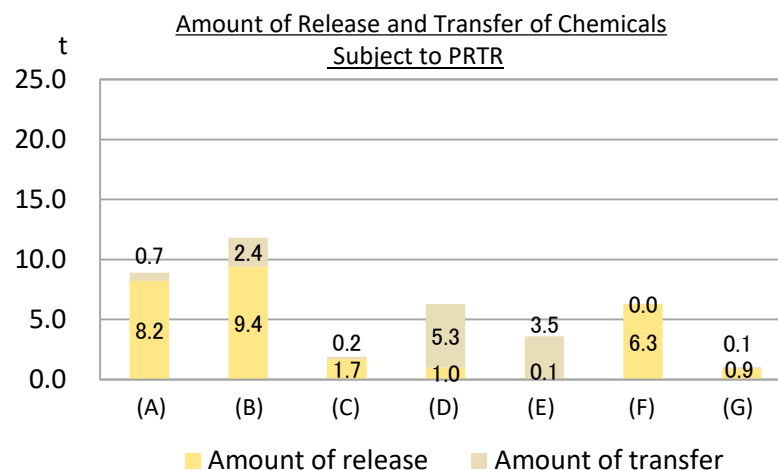
◆ Managing Chemicals Subject to PRTR

Based on the PRTR Law, we compile and release data on chemicals subject to the PRTR including amounts released into the environment or transferred as solid waste.

*A Pollutant Release and Transfer Register (PRTR) is a system for compiling and disclosing data on hazardous chemical substances including their sources, how much is released into the environment or transferred off-site with solid waste.

Substance	Amount released to the atmosphere	Amount of transfer
(A) Xylene	8.2	0.7
(B) Toluene	9.4	2.4
(C) Ethyl benzene	1.7	0.2
(D) Methylene chloride	1.0	5.3
(E) Tetrahydromethyl phtalicanhydride	0.1	3.5
(F) Syrene	6.3	0.0
(G) 1,2,4-trimethylbenzene	0.9	0.1

(Unit: t)



◆ Environmental awareness in the material procurement process

Denyo has appealed to suppliers of parts and materials and contractors and asked them to consider the environment in chemical substance management and other fields. We summarized these initiatives in the Denyo Group Green Procurement Guideline and began introducing the guideline to all of our employees.

We will try to utilize the guideline externally as well as internally to be more proactive in our environmental initiatives in the material procurement process.

Environmental conservation & community contribution activities

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Environmental conservation & community contribution activities

Environmental conservation activities

◆ Roof Greening

Based on our environmental policy “promoting environmentally sound business activities,” Denyo has been implementing roof greening activities at the headquarters building since 2012. Roof greening can reduce temperature rise in a building, resulting in mitigation of the heat-island phenomenon and improved cooling efficiency. Thirty-eight percent (40.88 m²) of the headquarters building rooftop area is part of the roof greening efforts, including green planters. The light, artificial soil used withstands the dry summer air well. In addition, approximately 20 varieties, mainly blooming plants, flourish throughout the year so that the four seasons can be sensed, and you can feel refreshed. The area is used by many employees to relax.



◆ Water Quality Monitoring



The Fukui plant employs a method that collects treated drain water in an on-premises balancing reservoir before releasing it into a river. We monitor water quality to ensure that an environment suitable for living creatures is maintained. Even if contaminated water should escape at the primary water discharge, the risk of releasing contaminated water directly into the river is minimized.

Environmental conservation & community contribution activities

Community contribution activities

◆ Internship Programs

Fukui Plant invites local high school students for internships. The internship system aims to encourage students to receive practical experience in the production process to gain a deeper understanding of work, society and Denyo. We will strive to become more familiar to our communities and strengthen local bonds by proactively holding such events as plant visits and internships for local elementary school children and high school students.



Panel repair process: Cutting out and bending



Assembly process: Drawing check



Developing Technology Tomorrow's Power Needs.

Denyo[®]

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